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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,520	11/27/2001	Seung-June Yi	K-0324	8124
34610	7590	02/09/2006	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			SOL, ANTHONY M	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/993,520

Applicant(s)

YI ET AL.

Examiner

Anthony Sol

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 29-34, 37-42, 52-57, 60-63 and 75-78 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-34, 37-42, 52-57, 60-63 and 75-78 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

- Applicant's Amendment filed 11/22/2005 is acknowledged.
- Claims 29-34, 37-42, 52-57, 60-63, and 75-78 are pending.
- Claims 29-34, 37, 40-42, 52-55, 57, 60 and 62 have been amended.
- Claims 35, 36, 43-51, 58, 59 and 64-74 have been canceled.
- Claims 1-28 were previously canceled.
- Claims 75-78 have been added.

### ***Claim Objections***

- For claim 31, line 2, it is believed that "the lower layer" should state -- wherein the lower layer--.
- For claim 38, line 2, it is believed that "protocol data unit is sent a peer entity" should state – protocol data unit is sent to a peer entity--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 29 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,625,133 B1 ("Balachandran") in view of Admitted Prior Art (Prior Art).

Balachandran shows in Fig. 3 a TX Buffer (transmission buffer) that stores SDUs from upper layer (claim 29 – a transmission buffer storing at least one service data unit (SDU) transferred from an upper layer; claim 52 – storing at least one SDU transferred from an upper layer in a transmission buffer).

Balachandran further shows in Fig. 3 a Segmenter (segmentation module) segmenting SDUs from the TX Buffer into PDUs (claim 29 – a segmentation module segmenting the at least one SDU unit received from the transmission buffer into at least one PDU; claim 52 – segmenting the at least one SDU received from the transmission buffer into at least one PDU).

Balachandran still further shows in Fig. 3 a PDU being provided from the segmenter to the lower layer (claim 52 – providing the at least one PDU to the lower layer).

Balachandran does not explicitly disclose a radio link control (RLC) transparent mode entity, nor does he disclose that the PDU is formed according to size information from the lower layer.

The applicant has admitted that Fig. 1 shows an RLC transparent mode entity and that the PDUs can have the size requested by the MAC layer 104 (lower layer)(application, pg. 4, para. 15; claim 29 – the RLC transparent mode entity; claim 29 - according to size information transferred from a lower layer).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention was made to modify the usage of transmission buffer and the segmentation module as shown by Balachandran to be used in the RLC transparent

mode entity and have the PDUs be sized according to size information requested by the MAC layer as disclosed in the Admitted Prior Art. One skilled in the art would have been motivated to combine Balachandran with Admitted Prior Art (collectively "Balachandran-Prior Art") to generate the claimed invention with a reasonable expectation of success.

3. Regarding claims 30, 31, 53 and 54,

Balachandran-Prior Art discloses a method and system that covers all the limitations of the parent claim.

Balachandran-Prior Art discloses in Fig. 1 of the Application that PDU is transferred to the lower layer according to the "PDU number" requested by the MAC layer (lower layer).

4. Regarding claims 33, 34, 56 and 57,

Balachandran-Prior Art discloses a method and system that covers all the limitations of the parent claim.

Balachandran-Prior Art shows in Fig. 1 of the application that PDUs are transferred from RLC Tr Entity 201 to the lower layer through a logical channel (e.g. BCCH).

5. Regarding claims 37 and 60,

Balachandran-Prior Art discloses a method and system that covers all the limitations of the parent claim.

Balachandran-Prior Art shows in Fig. 3 of Balachandran that the TX buffer 1 receives SDUs from through M-SAPs.

6. Regarding claim 38,

Balachandran-Prior Art discloses a method and system that covers all the limitations of the parent claim.

Balachandran-Prior Art shows in Fig. 1 of Application a PDU is sent to a peer entity.

7. Regarding claim 42,

Balachandran-Prior Art discloses a method and system that covers all the limitations of the parent claim.

Balachandran-Prior Art shows in Fig. 1 of Application, a receiver buffer and a reassembly module wherein the receiver device 105 stores the PDUs received and the PDUs are reassembled by SDU unit by assembly part 107 (Prior Art, Fig. 1, pg. 3, lines 5-9).

8. Claims 32 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balachandran in view of Prior Art, and in further view of 3GPP\_TSG\_RANA\_WG2 archives-May 2000 email (#16)(“WG2 email archives, May 2000”).

Balachandran-Prior Art discloses a method and system that covers all the limitations of the parent claim.

Balachandran-Prior Art does not disclose that the RLC transparent mode entity receives the size and number information through a MAC-STATUS-Ind primitive from the MAC layer.

WG2 email archives discloses that the TR-RLC receives a MAC\_STATUS\_IND telling it how many PDUs to send to the MAC and how many bits each PDU must contain (size and number information)(pg. 1, lines 12-13).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention was made to modify the RLC Tr Entity of Balachandran-Prior Art so that the MAC\_STATUS-IND tells it the size and number information as disclosed in WG2 email archives, May 2000 in order to be consistent with the Standard. One skilled in the art would have been motivated to combine Balachandran-Admitted Prior Art with WG2 email archives, May 2000 (collectively "Balachandran-Prior Art-WG2 email archives, May 2000") to generate the claimed invention with a reasonable expectation of success.

9. Claims 39 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balachandran in view of Prior Art, and in further view of ETSI TS 125 322 v3.1.2 ("ETSI").

Balachandran-Prior Art discloses a method and system that covers all the limitations of the parent claim.

Balachandran-Prior Art does not disclose wherein the at least one SDU is segmented by the segmentation module depending upon when a service is

established.

ETSI discloses that how to perform the segmentation is decided upon when the service is established (pg. 11, lines 2-3).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention was made to modify the segmentation module of Balachandran-Prior Art so that segmentation is decided upon when the service is established as taught by ETSI in order to comply with the existing standard. One skilled in the art would have been motivated to combine Balachandran-Admitted Prior Art with ETSI (collectively "Balachandran-Prior Art-ETSI") to generate the claimed invention with a reasonable expectation of success.

10. Claims 40, 41, 62, 63 and 75-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balachandran in view of Prior Art, and in further view of 3GPP TSG RAN WG2 Meeting #yy, "Change Request", Document R2-00xxxx. ("Change Request").

Regarding claims 40 and 62,

Balachandran-Prior Art discloses a method and system that covers all the limitations of the parent claim.

Balachandran-Prior Art does not disclose that an allowable size for the at least one PDU is decided based on formats of a transport channel.

Change Request discloses that the allowed size for the segments (PDUs) shall be determined from the transport formats of the transport channel.



It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention was made to modify the segmentation module of Balachandran-Prior Art so that the allowed PDU size is dependent on the transport formats of the transport channel as disclosed by Change Request in order to comply with the existing standard. One skilled in the art would have been motivated to combine Balachandran-Admitted Prior Art-Change Request (collectively "Balachandran-Prior Art-Change Request") to generate the claimed invention with a reasonable expectation of success.

11. Regarding claims 41 and 63,

Balachandran-Prior Art discloses a method and system that covers all the limitations of the parent claim.

Balachandran-Prior Art does not disclose the at least one PDU provided by the segmentation module comprises one complete SDU unit or segments of one complete SDU.

Change Request disclose that the RLC SDUs might be segmented or if segmentation is not used, one RLC PDU can be used for one RLC SDU (section 9.2.2.9, lines 5, 8-9).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention was made to modify the segmentation module of Balachandran-Prior Art so that the PDU might be segmented or if not, one PDU can be used for one SDU as disclosed by Change Request in order to comply with the existing standard. One skilled in the art would have been motivated to combine Balachandran-Admitted

Prior Art-Change Request (collectively “Balachandran-Prior Art-Change Request”) to generate the claimed invention with a reasonable expectation of success.

12. Regarding claims 75 and 77,

Balachandran-Prior Art discloses a method and system that covers all the limitations of the parent claim.

Balachandran-Prior Art does not disclose that the at least one PDU is transferred to the lower layer in each transmission time interval.

Change Request discloses if segmentation is not used more than one RLC SDU can be sent in one transmission time interval using one RLC PDU per RLC SDU (section 9.2.2.9, lines 8-9) .

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention was made to modify the RLC Tr Entity of Balachandran-Prior Art so that the at least one PDU is sent in one TTI as disclosed by Change Request in order to be consistent with the Standard. One skilled in the art would have been motivated to combine Balachandran-Admitted Prior Art with Change Request (collectively “Balachandran-Prior Art-Change Request”) to generate the claimed invention with a reasonable expectation of success.

13. Regarding claims 76 and 78,

Balachandran-Prior Art discloses a method and system that covers all the limitations of the parent claim.

Balachandran-Prior Art does not disclose all PDUs segmented from an SDU are transferred to the lower layer in a transmission time interval (section 9.2.2.9, line 7)

Change Request discloses all the RLC PDUs carrying one RLC SDU are sent in one transmission time interval.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention was made to modify the RLC Tr Entity of Balachandran-Prior Art so that all the PDUs are sent in one TTI as disclosed by Change Request in order to be consistent with the Standard. One skilled in the art would have been motivated to combine Balachandran-Admitted Prior Art with Change Request (collectively "Balachandran-Prior Art-Change Request") to generate the claimed invention with a reasonable expectation of success.

### ***Response to Arguments***

14. Applicant's arguments with respect to claims 29 and 52 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

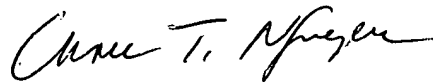
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Sol whose telephone number is (571) 272-5949. The examiner can normally be reached on M-F 7:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Anthony Sol  
Examiner  
Art Unit 2662  
2/6/2006



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